SATURDAY, AUGUST 29, 1874.

ORIGINAL COMMUNICATIONS.

AN INVESTIGATION INTO THE ACTION OF VERATRUM VIRIDE UPON THE CIRCULATION.

BY H. C. WOOD, JR., M.D.,

ASSISTED BY JOS. BERENS, M.D.

PART I.—VERATROIDIA.

(Continued from page 740.)

Section B.—Action on the Heart and its Nerves.

IT having been determined that the direct action of veratroidia upon the circulation is to lower the arterial pressure, and at the same time to slow the pulse, the question naturally arose, Does the alkaloid act directly upon the heart, or does it influence the latter slowly through the nervous centres? The following experiments were instituted to settle this point:

Experiment X.—A stout tomcat. During anæsthesia, opened the ascending cava and injected three-fourths of a grain of veratroidia (impure). There was an instantaneous arrest of respiration, followed at once by a violent general tetanic spasm, involving all the muscular system and the diaphragm. After the injection, the heart beat several times quite forcibly, though not nearly with the normal strength. Upon opening the thorax, the heart was found making vermicular contractions, which continued for some minutes. The venous pressure in the large veins was very decided, causing the blood to squirt from them when cut.

Experiment XI.—A large dog. One-tenth of a grain of pure veratroidia was injected into the femoral vein. The heart was immediately arrested in diastole, and, respiration occurring, became enormously dilated with blood. The auricles continued to pulsate. The left ventricle contained arterial blood, the right venous blood. The application of the strongest current to the surface of the heart, or by needles introduced into it, induced no contractions whatever.

Experiment XII.—A large cat. The spine was cut in the upper dorsal region, and a small hole was made in the chest, so that the finger could be inserted in such a way as to rest on the heart,—the animal being kept during the entire period anæsthetized. One-eightieth of a grain of veratroidia (impure) was injected into the femoral vein, without any very obvious effect. One-fortieth of a grain was then injected, with a similarly negative result. One-half of a grain was finally thrown into the vein, and the heart-beats at once commenced to slacken, and soon ceased. At the immediate autopsy the heart was found to be flabby and dilated. It refused entirely to respond to galvanic currents.

Experiment XIII.—A large terrier cur had his cord cut in the extreme upper dorsal or lower cervical region, and the par vagum also divided. The respiration was maintained artificially. The animal received various small doses of impure veratroidia, and finally one-fourth of a grain was thrown at once into the femoral vein. In a minute, or less, the pressure fell to nothing, and pulsations ceased. At the immediate autopsy the heart was found flabby and dilated. Galvanic currents had no perceptible effect upon it.

Experiment XIV.—A large cur dog had its cord cut in the upper dorsal (lower cervical?) region, and afterwards its pneumogastrics. After small amounts of a very impure veratroidia had been exhibited, three half-grain injections were thrown, in as many minutes, into the femoral vein. The heart-movements ceased immediately after the last injection; the pressure in half a minute fell to ten, in another half-minute to zero. The strongest currents were unable to affect the cardiac muscle.

The above experiments, which have been confirmed at various times, certainly prove that veratroidia has a direct action upon the cardiac muscle: of course, those made after previous division of the cord and of the pneumogastrics, *i.e.*, after isolation of the heart, are the most satisfactory. In Experiment X. there is indeed no proof that the arrest was really the result of a direct action of the poison upon the cardiac muscle.

A fact which is indicated by the above experiments, and which is very obvious in the light of subsequent experimentation, is that very large doses of the alkaloid are required to affect the cardiac muscle,—doses much greater than are sufficient to kill, and very much greater than the minimum amount which will profoundly affect the respiration. It seemed probable, and subsequent experimentation has confirmed the surmise, that the drug has some action upon the heart besides that which it exerts directly on the cardiac muscle. In endeavoring to determine this, the first study was as to its influence upon the cardiac inhibitory nerves.

A reference to Experiment IV. or V. will show that an enormous reduction of the pulse follows the exhibition of veratroidia. Experiment further shows that this occurs when artificial respiration is kept up actively, and therefore that it is due not to an indirect action of the alkaloid, but to an influence exerted directly on the heart or its nerves. The reduction in the number of the pulse-rate may be due to an influence exerted upon the pneumogastrics, or may be the result of some other cause. To test this, the following experiments were undertaken:

Experiment XV.—A stout terrier. A small dose of woorari, just enough to quiet, given, and artificial respiration practised.

TIME.	DOSE.	PULSE.	REMARKS.
0 m.			Cut the pneumogastrics.
27 "		168	
30 "	gr. 1-40		Injected into the peritoneal cavity.
39 "	gr. 1-40		Injected into the peritoneal cavity.
47 "		189	

Experiment XVI.—A stout cur.

TIME.	DOSE.	PULSE.	REMARKS.
0 m			Cut the pneumogastrics.
26 "		176	
64 "		180	
76 "	gr. 1-40		
78 "	gr. 1-40		
82 "		164	
90 "	gr. 1-40	168	
104 "		212	
110 "	gr. 1-20	112	
113 "		204	

These two experiments are in accord in showing that doses of the drug which, in the uninjured dog, lower the pulse-rate very greatly, have no effect when the par vagum has been previously divided. Proof is thus afforded that the reduction of the pulse which is ordinarily present is brought about through the inhibitory nerves. Another method of getting the same result is by a division of the par vagum in the animal under the influence of the poison, as in the following experiments:

Experiment XVII.—A stout dog.

TIME.	DOSE.	PULSE.	REMARKS.
0 m.		68	
1 "	gr. 1-40		Injected into the carotid slowly.
3 "		44	
11 "		52	
12 "			Cut the pneumogastrics.
12¼ "		168	

This experiment is in accord with those previously given, and seems, with them, to establish the fact that the primary slowing of the cardiac beats by the drug is chiefly brought about by an action on the inhibitory cardiac nerves.

This being so, it is *a priori* to be expected that when the heart is freed from the influence of all the nerves antagonistic to the pneumogastrics, the results of the primary inhibitory impression should be very marked.

In order to test this point, the following experiments were performed:

Experiment XVIII.—A large cur dog. Veratroidia impure. The spine was cut in the lower cervical region.

TIME.	DOSE.	PULSE.	PRESSURE.	REMARKS.
0 m.		136	85-93	
3 "		122	35-40	The fall is due to an extremely active artificial respiration.
8 "				Artificial respiration regulated to thirty strokes of bellows per minute, and so kept during the rest of the experiment.
13 "		160	65-70	
14 "	gr. 1-30		65-70	One-thirtieth grain injected into femoral vein. Instantly the arterial pressure fell nearly to zero, and all movement ceased. No pulse could be felt in the exposed carotids or femorals, or motion of the heart through the chest-walls. About one minute after this, the pneumogastrics were cut, and instantly the pulse returned in the carotids and femorals.
31 "		168	50-60	

Experiment XIX.—A youngish cur, of moderate size. The cord was cut in the extreme upper dorsal or lower cervical region. After some time, one-fortieth of a grain of impure veratroidia was injected into the femoral vein. Before this, the mercury in the cardiometer had shown signs of the formation of a clot, but instantly after the injection the mercury fell very much, and after one or two very slow pulsations all movement ceased. The pneumogastrics were divided, but a clot prevented any movement of the mercury. On opening the chest, the heart was found to be in vigorous movement.

Experiment XX.—A powerful bull-dog.

TIME.	DOSE.	PULSE.	PRESSURE.	REMARKS.
0 m.				Spine cut in lower cervical region.
23 "			95-105	Artificial respiration.
26 "		56	90-100	
32 "		56		
38 "			90-105	
45 "	gr. 1-12			One-twelfth grain injected into the femoral vein. The mercury fell at once to 10 (equivalent to zero). No beat occurred for one or two seconds, then a succession of very distant, slow, and powerful beats, with a great rise of arterial pressure, followed by a greatly increased rapidity of heart's action. In a few seconds this high pressure gave way to a sudden slowing or stoppage of the pulse and fall of the pressure to 15; then slow, distant, very full beats (15 c. each), followed by a rise of pressure to 125, with a rapid pulse, then another fall, etc., as before.
49 "				Alternations continuing, but not so marked as before.
51½ "	gr. 1-12		95-100	Injected as before.
51¾ "			20-35	
52 "			145-160	
52¼ "			30-33	
52⅓ "			140-145	
52½ "			50-60	
53 "				Same alternation of rise and fall.
54 "	gr. ⅓			Into jugular.
61 "			55-60	
62½ "	gr. ⅓			Into jugular.
64 "		180	80-180	
70 "		168	40-50	There is no longer a marked rise or fall of the mercury or pulse. Both have been very steady at their present position for some minutes.
70½ "				Par vagum cut.
71½ "		168	55-60	
73 "			55-60	
79 "		168	50-60	Dog killed.

These experiments certainly are corroborative of the conclusions previously reached, namely, that the primary slowing of the pulse by veratroidia is due to a stimulant effect upon the inhibitory nerves. The vaso-motor nervous system having been paralyzed, and possibly the accelerators of the heart also, by the spinal section, full sway was left to the inhibitory nerves, and consequently in Experiment XVIII., where a minute dose of the alkaloid was thrown into the circulation, there was immediate diastolic arrest, and the singular phenomenon was offered of a heart, quiet, dilated, and seemingly dead, started into new life by division of the pneumogastric nerves,—*i.e.*, by removal of the inhibitory influence. The strength of the inhibitory apparatus is known to vary very much even in different individuals of the same species, and the diverse results reached in the last and the first of these experiments are merely instances of difference in degree and not in kind. The extraordinary rise and fall of the mercury in the cardiometer-tube, the incessant succession of cycles of diastolic cardiac arrest, prolongations of the beat, and hurried action of the heart, are explainable only upon the supposition that the inhibitory apparatus was intensely excited, but was unable to hold, as it were, the normal cardiac impulse completely in its power. The rapid alternations were, in other words, merely the varying phases of a struggle between the two forces or powers.

Upon examining the record of this last experiment, it will be seen that after the injection of a large dose of the alkaloid the alternations of low and high pressure ceased, and the mercury in the manometer became steady at a position much below normal. The most plausible explanation of this is that the excess of the poison changed a condition of inhibitory excitation into one of inhibitory paralysis, or, in other words, that whilst a small dose of veratroidia excites, a large one paralyzes the pneumogastrics.

This explanation is strongly confirmed by the fact that coincident with the settling down of the pressure in the experiment just alluded to, there was a rise in the number of the pulse, and that section of the par vagum at this time did not affect the pulse-rate; a proof that the pneumogastrics were really paralyzed.

In order, however, to establish beyond peradventure the truth of the proposition, the following experiments were performed:

Experiment XXI.—A very small dog.

TIME.	DOSE.	REMARKS.
0 m.	gr. 1-40	Into femoral vein.
11 "	gr. 1-40	" "
29 "	gr. 1-20	" "
43 "	gr. 1-20	
46 "		A current was applied to the pneumogastrics (just cut), at first mild, afterwards very intense; no effect whatever was induced; the nerve was completely paralyzed.

Experiment XXII.—A young, stout pup.

TIME.	DOSE.	PULSE.	PRESSURE.	REMARKS.
0 m.	gr. 1-40	130	90–100	Into femoral vein.
25 "				Cut pneumogastrics.
25½ "		165	45–50	
28 "				Current to par vagum affected the heart very much.
32 "	gr. 1-40		30–35	Into femoral vein.
34½ "		192		
35 "				Applied strong current to par vagum; no effect.
38 "		186	80–85	
40 "				Very strong current to par vagum.
40½ "		186	45–50	Current broken.
44 "			45–50	
65 "		186	38–52	Current applied to pneumogastrics in the root of the neck where they had not been previously touched; no effect.

Experiment XXIII.—A stout terrier. Artificial respiration and small dose of woorari, just enough to quiet.

TIME.	DOSE.	PULSE.	PRESSURE.	REMARKS.
0 m.			85–95	
15 "			85–95	Cut pneumogastrics.
21 "				Current applied to pneumogastrics caused instant fall of pressure and prolonged diastolic arrest.
21½ "			15	
27 "		168	45–50	
30 "	gr. 1-40		65–75	Injected into the peritoneal cavity.
39 "	gr. 1-40		60–70	Injected as before.
47 "		189		
48 m.			15	Application of current as before caused diastolic arrest and fall.
53 "	gr. 1-40		45–55	Into femoral vein.
61 "			20	Some fall under application of current to par vagum and slowing of pulse, but no diastolic arrest.
65 "			30–35	
68 "				A very intense current applied to the pneumogastrics failed to influence the heart.

Experiment XXIV.

TIME.	DOSE.	PULSE.	PRESSURE.	REMARKS.
				Artificial respiration resorted to, with exhibition of woorari in dose sufficient to keep the dog quiet.
0 m.	gr. 1-20		*15½–16	Injected into peritoneal cavity.
6 "			10½–11	
10 "				Pneumogastrics cut. Canula changed to carotid artery.
20 "			10–12	
38 "			9–11	Under a strong current passed through the pneumogastrics, which also slowed action of heart.
68 "	gr. 1-10			Into peritoneal cavity.
90 "			9	Current applied to pneumogastrics had no effect whatever.
				The arterial blood throughout this experiment was very dark and venous in appearance, owing to a leak in the bellows.

Experiment XXV.—A stout cur.

TIME.	DOSE.	PULSE.	PRESSURE.	REMARKS.
0 m.				Par vagum cut.
26 "		176	140–145	
48 "		0	0	Instant diastolic arrest from mild current to par vagum.
50 "	gr. 1-40			Into femoral vein.
52 "	gr. 1-20			Doubtful how much of these injections entered; some obstruction in the canula.
58 "		164	100–105	
64 "	gr. 1-20	168	110–115	Into femoral vein.
75 "			85–90	Began artificial respiration.
84 "	gr. 1-20	112	80–85	Into femoral vein.
91 "				Current of same strength as before to par vagum; at first no effect.
93 "		52	50–60	Current continued.
93¼ "				Current broken.
97 "	gr. 1-20	84	75–80	
99 "		80	50–60	Very intense current applied to a freshly exposed portion of the pneumogastrics, low down in the neck, had no effect whatever.

These experiments speak so plainly for themselves that a discussion of them is scarcely necessary. They are five in number, and in each case it will be noticed that after a full dose of the poison even the most intense faradaic currents applied to the pneumogastrics failed to affect the heart. Every precaution was taken to prevent the possible fallacy of an exhaustion of the nerve by the current itself, and the teachings of the experiments must be received as final. It would have been very well to have tested the comparative sensibility of the par vagum before and after the injection of small doses

* In this experiment there was used a cardiometer with larger divisions of the scale than the one commonly employed.

of the poison, and thereby to have determined whether the inhibitory excitement primarily induced by such doses of the alkaloid is centric or peripheral. The doing of this, however, would have required an accurate determination of the minimum power of current required in the unpoisoned animal to influence the heart, and such determination necessitates the use of more delicate apparatus than was at hand. The final inhibitory paralysis is certainly peripheral; but whether the primary inhibitory stimulation is centric or peripheral must be left for other investigations to determine.

(To be continued.)

CONFLUENT SMALLPOX IN THE EIGHTH MONTH OF PREGNANCY—CHILD BORN WITH THE DISEASE—RECOVERY OF MOTHER AND CHILD.

BY A. TREGO SHERTZER, M.D.,

Baltimore, Md.

I WAS summoned to see Mrs. F., æt. 35, a regular patient, February 25, and found her suffering with the premonitory symptoms of smallpox: high fever, flushed countenance, throat slightly sore, loss of appetite, constipation, eyes injected, considerable pain in head and small of the back, She was eight and a half months advanced in pregnancy. After a careful examination, I ordered an ounce of castor-oil at once, and xylol. ʒi, mucil. acaciæ ʒiij. M. Sig., teaspoonful every four hours. After giving the general directions, and before leaving, I told Mr. F. the true state of affairs,—that in all probability his wife would miscarry, and that I might possibly lose both mother and child.

February 26.—I found Mrs. F. rather worse; she had not slept much during the night; bowels moved by oil; high fever, and no appetite. Ordered elix. val. ammon. ʒij, morph. sulph. gr. ii. M. Sig., teaspoonful as required; with beef-tea, etc., and the same treatment to be continued.

February 27.—High fever and great thirst, for which I ordered a wineglassful of citrate of magnesia, three, four, or five times during the day. Slight eruption, and throat quite sore, for which I ordered a gargle; eyes sore and inflamed. Same treatment to be continued, and entire body to be sponged with hot vinegar and salt night and morning. Slept little during previous night.

February 28.—Rested badly; high fever, great thirst, tongue heavily coated, throat very sore, for which I used locally a solution of nitrate of silver, gr. x to aq. ʒi. Bowels constipated; entire person covered with eruption, and swollen. Same treatment continued, with the morphia mixture during the night, with beef-essence, brandy-and-water, and potassii chlor. ʒss, pulv. alum. gr. xx, pulv. borac. gr. xx, sacch. albi ʒss. M. Ft. chart. No. viii. Sig., one every four hours. I ordered a solution of elm to be applied to the eyes; also acid. carbolic. ʒi, oleum olivæ, glycerin, āā ʒiss. M. Sig., apply to face.

March 1.—Rested badly during previous night. High fever, great thirst; general appearance very puffy; literally covered with one mass of dark scabs; throat considerably ulcerated, and great difficulty in breathing and swallowing; complains of general pains, especially in abdominal region; eyes very sore, urine very high-colored and offensive, no appetite, and slight delirium. Applied a solution of nitrate of silver, gr. xx to aq. ʒi, to throat, and to continue powders. Continue the xylol mixture, with a wineglassful of citrate of magnesia every four hours. To have beef-essence with brandy-and-water. Tongue heavily coated and dry. Ordered the solution of elm to be kept over the eyes, and the mixture of carbolic acid, olive oil, and glycerin to be kept over the face, and the entire body to be sponged night and morning with hot vinegar and salt. Before leaving, I informed Mr. F. that his wife's case was assuming a very unfavorable aspect. At five o'clock same day I was sent for in haste, with a message that Mrs. F. was dying. My office being at least three miles distant, I drove in haste to her residence, and found her in a reclining position, gasping for breath. I saw at once the throat was closed, owing to the ulceration. Dipping the probang into the solution of nitrate of silver, I passed it down the throat, after which she spat out great flakes of muco-pus. Finding that her abdominal pains were greatly on the increase, I ordered hot hops and corn-meal poultices to be kept on the abdomen, and that the same treatment be continued, instructing Mr. F. how to use the probang.

March 2.—Rested very badly last night, although she took one grain of morph. sulph. in one ounce of elix. val. ammon. during the night. High fever, dry and coated tongue, and great thirst; whole body and face much swollen; eyes very sore and perfectly closed; throat very much ulcerated; general pains very severe, especially abdomen and thighs; tongue very dry and coated, mouth very sore; bowels opened during the night; urine very scanty, high-colored, and offensive. Continued same treatment, with poultices to abdomen, elm-solution to eyes; mopped her throat and sponged her off from head to feet with hot vinegar and salt.

March 3.—Little or no change in her condition; slept a little during the night, though quite delirious. Abdominal pains very severe. Continued same treatment, except morphia mixture; to have plenty of beef-essence and brandy-and-water. I told Mr. F. that it was very doubtful if I could save his wife, as her case was rather a hopeless one, and if the abdominal pains continued, to send for me, and I would rupture the membranes and deliver.

March 4.—With the use of heavy doses of brandy, slept well during the night; very little change in her condition; bowels moved. Continued the same treatment. At twelve o'clock at night Mr. F. came after me, stating that his wife was smothering, and the abdominal pains were so severe that she could not stand it. After cleaning her throat with the probang and solution of silver, I gave her half a grain of morphia and brandy, with the hot poultice to abdomen. After waiting some two hours, the pains continuing, I concluded to rupture the membranes and deliver; but upon finding her parts greatly swollen and sore, I concluded to give more morphia and brandy, and wait until morning.

March 5, 7 A.M.—Patient sound asleep. To have xylol mixture, beef-essence, hot poultices, and sponged. 6 P.M.—Patient much easier.

March 6.—Patient quite easy this morning. General appearance much better; rested some during the night. Bowels opened with the citrate of magnesia. Scabs commencing to fall off. To continue same treatment. The patient gradually improved, appetite returning.

March 8, 11 P.M.—I was sent for, and found her suffering with slight pains. I lay down in an adjoining room, and requested that I be called when wanted.

March 9.—At half-past eight o'clock regular pains came on. Prof. Byrd was sent for, who delivered her of a fully-developed son, which was literally covered with the eruption of smallpox. In due time—that is, in an hour or so after confinement—the infant was put to the breast, and the mother placed upon good, nourishing diet. From this time mother and infant commenced

to improve, and recovered, without a single trace of the disease, and they are now both living and doing well.

At the request of my friend Prof. Harvey L. Byrd, I took notes of the case, as we both considered it a very remarkable recovery.

A CASE OF PSEUDO-HYPERTROPHIC MUSCULAR PARALYSIS.

BY C. H. DRAKE, M.D.,

Scioto, Pa.

TO Duchenne of Boulogne belongs the honor of bringing this singular affection before the profession and giving to it a distinct clinical history. First applying the name "hypertrophic paraplegia of infancy," he afterwards substituted "pseudo-hypertrophic paralysis." Since then numerous observers have accurately described the disease, under various names. Niemeyer terms it "progressive muscular paralysis as a result of hypertrophy of the interstitial fatty tissue;" and Jaccoud proposes the term "progressive muscular sclerosis." The disease is evidently exceedingly rare, as but few cases have been placed on record. In this country the first recorded case is that of Drs. Ingalls and Webber (*Boston Med. and Surg. Journal*, Nov. 1870). Then a case by Dr. Pepper (*Phila. Med. Times*, June 15 and July 1, 1871). One by Dr. Mitchell (*Photographic Review*, Oct. 1871). One by E. M. Estrazulas (*Obstet. Journal of Great Britain and Ireland*, Am. Sup., page 81, Sept. 1873). Dr. Hammond (Treatise on Diseases of the Nervous System, 3d ed., page 699) describes one case as coming under his observation.

It is almost exclusively confined to children and young adults of the male sex.

The disease presents a curious train of symptoms, and when fully developed can scarcely be mistaken for or confounded with any other affection. In its incipiency, however, the symptoms are obscure and the diagnosis difficult.

The following interesting case has been under my care for nearly a year. Various forms of treatment have been adopted and carefully carried out, but without apparent benefit, and the patient seems to be gradually losing ground.

A. B., 12 years of age, born in Monroe County, Pa.; mother healthy; father illegitimate, intemperate, always extremely eccentric in his habits, and for several years past quite insane. There is no history of syphilis, rheumatism, or gout. Two of patient's brothers died of what the mother calls "brain-fever," attended with convulsions; another died of consumption (?), two others of diphtheria, and another in infancy (cause of death not known). Six years ago the patient had a severe attack of "brain-fever," accompanied with violent and long-continued convulsions, and he has never enjoyed good health since. The present difficulty was first noticed about five years ago,—quite mild then; but he has gradually grown worse, so that now he can scarcely walk a short distance to school. His face and neck present no abnormal appearance, and he is quite cheerful. All the lateral and anterior abdominal muscles and those of the shoulders, back, and chest have undergone very great atrophic changes; there is marked sacro-lumbar incurvation, and when walking he throws the shoulders and upper portion of the trunk far backward, balances himself on the metatarso-phalangeal articulations, elevates his heels, moves with a peculiar straddling step, can walk up a hill or stair only with great difficulty, and frequently pitches forward on his knees when attempting to increase his gait. When rising from a chair he throws the trunk forward, then grasps the thighs with his hands, and by a curious struggling movement assumes the erect position. His sleep is much disturbed, and he does not acquire knowledge as rapidly as other boys of his age; but his appetite is good, his bowels regular, the urinary secretion and body-temperature normal. There is increased action of the heart, amounting at times to severe palpitation, but there are no murmurs, and the ophthalmoscope reveals no changes in the fundus of the eyes. There is very decided hypertrophy of the muscles of the calves. Those of the fore-arms are also enlarged, but to a less degree, and quite recently I have noticed commencing enlargement of the muscles of the gluteal regions. The stomach and abdomen are distended and tympanitic, and there are large patches of dirty-brownish colorations on various parts of the body, giving the surface a marbled appearance. These patches are very irregular in form, are not sharply defined in their outline, but fade gradually into the natural color of the skin. His muscular strength is greatly impaired, being much less than that of his sister seven years of age. When eleven years and six months old he weighed sixty-one pounds. Quite recently (July, 1874) the following measurements were taken: height, 54 inches; right arm, greatest circumference, 6 inches; right fore-arm, greatest circumference, 6 inches; left arm, greatest circumference, 6 inches; left fore-arm, greatest circumference, 6¾ inches; right thigh, greatest circumference, 12⅜ inches; right calf, greatest circumference, 13 inches; left thigh, greatest circumference, 12½ inches; left calf, greatest circumference, 12¾ inches; around the buttocks, 23 inches.

There is a certain train of symptoms in pseudo-hypertrophic paralysis, more or less well marked, in every fully-developed case recorded; then there are other symptoms which are not constant, but are found only in certain cases. Mottling or coloration of the skin, for instance, which has been noticed in some of the cases described, in others did not exist. In Dr. Pepper's case, which, by the way, was a typical one, no change of color could be detected on any part of the surface. In the case of the lad A. B., however, there are a large number of irregular, ill-defined patches, some of them quite dark, and easily seen at a distance of ten or fifteen feet, while others are pale and indistinct. Nine months ago these spots were plainest over the stomach and abdomen, but they have gradually grown paler in these regions, while the skin over the pectoral muscles, which was of natural color when the patient was first seen, has assumed a muddy hue. I am inclined to the opinion that this mottling of the skin takes place only over the muscles while they are undergoing atrophic change, and that when this action ceases, and especially if a condition of pseudo-hypertrophy succeeds, the skin slowly assumes its normal color.

Apparent hypertrophy of certain muscles, usually those of the calves and fore-arms, is a prominent and very constant symptom. In the case of A. B. the gastrocnemii are greatly enlarged. They present a knotty appearance, and feel firm and elastic.

Anterior sacro-lumbar curvature, a tendency to

talipes equinus, and a slow wasting of certain muscles and groups of muscles, are seen in every instance. The walk is peculiar. Persons afflicted with this disease "waddle" along like a duck, and experience great difficulty in ascending elevations. My patient uses his arms quite as much as his legs in locomotion. He rapidly elevates and depresses them, like a gymnast walking a tight-rope.

At times he complains of pain of an acute character in the calves; aside from this he is free of pain, and has no tingling or sensation of numbness.

July 29, 1874.

CASE OF INFANTILE CONVULSIONS TREATED BY HYDRATE OF CHLORAL.

BY JAMES D. McGAUGHEY, M.D.,
Wallingford, Conn.

I ATTENDED a case of eclampsia several weeks ago in a little child nineteen months old, healthy and well nourished, but of a hereditary super-sensitive nervous system. Several children of the same family died in convulsions. The parents are healthy, with the exception of a little malarial fever occasionally. The first time the child was attacked, several teeth were pressing upon the gums, which were promptly lanced; but the convulsions continued five or six hours afterwards. This first attack was severe, but was controlled principally by bromide of potassium and thorough bathing, with application to spine and antispasmodic injections. The little patient having some evidence of malaria about him as the exciting cause of the convulsions, and the fever being paroxysmal, I put him upon a quinine treatment, with marked improvement. In about a week the quinia was omitted and the child was attacked again with eclampsia, worse than ever. The convulsion seemed to be principally of the left side, and lasted from 6 P.M. until 6 A.M. without any intermission. I tried every measure I could possibly think of to relax the spasms: systematic bathing, nausea and vomiting were produced, the bowels were freely acted upon, stimulating and antispasmodic injections were administered, mustard and garlic to spine, ice to the head, bromide of potassium internally, also valerian and assafœtida, but all to no purpose: the spasms continued unabated; the child seemed to be getting worse, the skin growing hotter, pulse more rapid, and the clonic, almost tonic, rigidity of the muscles greater; the eyes were staring, with balls rolled up or oscillating from side to side. About three o'clock in the morning, all treatment having failed to produce any impression whatever, I determined to try chloral. I had never seen that article recommended in infantile convulsions, yet knowing its therapeutic power it seemed very reasonable to me that it would answer the purpose exactly, as I needed a prompt and efficient remedy. I was satisfied the child could not survive unless quickly relieved, and the longer the convulsions continued the greater subsequent danger and fear, even though the eclampsia should be controlled. I did not succeed in getting the medicine until near four o'clock. I gave the following prescription:

℞ Hydrat. chloral., gr. ij;
Fl. ext. valerian., f℥i;
Aquæ gaultheriæ, f℥iii;
Aquæ dest., q. s. ad ℥i.

Of this mixture I gave a teaspoonful every hour. I administered two doses, and the first perceptible effect I noticed was a relaxation of the spasm about the muscles of the eyes, the lids closing for a while, then reopening, followed by closing again, showing a tendency to sleep. The pulse became less frequent, and the skin somewhat cooler. The child being somewhat better, with a fair prospect of coming out of the convulsion, and being greatly fatigued myself, I gave some directions, and went home. After my departure, the father, seeing the good effects of the medicine, gave another teaspoonful, and in a short time the child was fast asleep, and awoke in an hour or two perfectly free from spasms.

This is the only case in which I have tried the chloral in infantile convulsions, but I think it is one which, considering the thorough treatment previous to its use, exhibits its wonderful powers in allaying spasms. Its effects were prompt and unmistakable. I think that in those cases of convulsions complicating whooping-cough and pneumonitis it will prove more successful than bromide of potassium.

DOUBLE VAGINA AND NECK OF THE UTERUS.

BY CHARLES D. GREEN, M.D.

MRS. A. L., from Sussex County, Delaware, while stopping in the city recently, was taken suddenly ill with uterine hemorrhage. She was 39 years of age. Her husband stated that they had been married eleven years, and this was her first pregnancy, and that neither of them had discovered anything unusual, more than that the vaginal canal was very narrow.

On making per-vaginam examination, I found a tumor occupying the vaginal passage, but could not at first make out its precise character, as I could not discover the os uteri,—in fact, could not find any approach to the natural formation.

Between the labia and nymphæ on the right side, as high up as the meatus urinarius, I discovered an opening, which communicated with a large space where was lodged a fœtal mass, and above this the neck of the uterus. I enlarged this opening by pushing my finger forward, and found near the neck a communication with the second vagina which I had first examined. The septum separating the two canals extended from the vulva to the os uteri, four and a half to five inches in length and one-fourth of an inch thick.

The vagina that was continuous with the neck of the uterus could not admit the passage of the fœtus, whilst the one which corresponded with the well-formed vulva terminated in a cul-de-sac.

Close to the neck, at the end of the septum,

there was a small opening, through which the semen had most probably found its way to the uterus.

The exhaustion of the woman from hemorrhage showed there was no time to lose, and I determined to divide the septum and remove the fœtal mass. With a waxed thread and watch-spring, I passed Krammer's silver Eustachean catheter close up to the neck of the uterus, through the lateral fissure of the septum, then, turning its point towards the external opening, seized the thread with a forceps, and tied it firmly a quarter of an inch below the meatus urinarius. I passed a second thread in the same way and tied it as near as possible to the perineum, leaving between the two ligatures an interval of one-third of an inch for the division of the septum, which was divided with scissors on the point of my finger as far up as the neck of the uterus.

The cure was complete by the fifteenth day. At this time examination per vaginam revealed two openings leading to the neck of the uterus, united by a thin membrane, and so placed that after the finger is introduced into one opening the other is not perceived by the side of it. The uterus is single.

PHILADELPHIA, August 6, 1874.

THE "PINES" OF NEW JERSEY AS A RESIDENCE FOR PATIENTS WITH PULMONARY DISEASE.

BY JOHN R. STEVENSON, M.D.

AS the physician from Philadelphia rides over the Camden and Atlantic Railroad on his way to the "city by the sea," he notices, after an hour's ride, a remarkable change in the appearance of the country. From well-cultivated fields, interspersed with patches of fine forest-trees, he emerges gradually, as he approaches the station of Berlin, seventeen miles from the river, into a barren country where the white sand is covered with dwarf oaks (Quercus elongata and triloba), and pines (Pinus inops), and the huckleberry (Vaccinium resinosum and corymbosum); and if it be the month of June, his eyes will be relieved by the bloom of the laurel and the magnolia. Through this country, dotted with here and there a settlement like an oasis in the desert, he rides for another hour until he emerges upon the meadows of the coast, and wonders for what purpose such a land was created, and whether nature's economy would not be better served if the whole of it were again sunk to the bottom of the ocean from which it came forth.

It is to this section of New Jersey, familiarly called by the natives the "Pines," that I wish to invite the attention of the profession. Geographically, it is the Atlantic slope of that State, which, beginning in the upper part of Cape May County in the south, extends in length ninety miles north to Monmouth County in the northeastern end of the State; and in width, from the sea-coast to the valley of the Delaware, a varying breadth, whose greatest distance is along the Camden and Atlantic Railroad, about forty miles. The valley of the lower Delaware, about eighteen to twenty miles wide, is separated from it by a ridge or elevation, whose greatest height is about three hundred feet above the level of the sea; from this ridge water-courses run in two directions, the one leading to the Delaware River, the other to the ocean. This flat plain has a soil of coarse white sand, from six to twelve inches in depth, resting upon a bed of gravel or clay. It is abundantly supplied with water from numerous springs and rivulets, which in many places overflow the lower portions of the land, forming great swamps, which were originally covered with a growth of cypress (Cupressus thyoides and disticha), trees famous for their size and the durability of their wood, but are now mostly supplanted by the stunted oak and pine, through which still roam the deer and an occasional bear. The water of these springs and streams is peculiar, having a sweet pleasant taste and a brown or red color, giving to the hand, when thrust into it, the appearance of being bloody. It is called, in that country, "cedar-swamp water," and has the reputation there of being very healthy both to drink and to bathe in.

The climate is milder and more uniform than it is in the same parallel of latitude west of it, as the extreme heat of summer and cold of winter are materially modified by the proximity of the ocean and by the slope of the land to the southeast. This is shown not only by direct observation, but also by the character of the flora, which is essentially different from that of adjacent Pennsylvania, and is similar to that of Virginia and the Carolinas. A peculiarity about this locality is that malarial diseases are unknown, even along the streams and in the swamps, while in the Delaware valley malaria is prevalent, in a mild form, along all the water-courses that empty into that river.

From the earliest settlement of West Jersey, tradition has fixed in the minds of the natives a strong belief in the healthfulness of the "Pines," especially its beneficial effects upon diseases of the pulmonary organs; but as, until within a few years, the land, believed to be barren and worthless, was almost uninhabited except by wood-choppers and charcoal-burners, little was definitely known about it, except that occasionally an individual laboring under pulmonary disease, who was forced by business to spend some time there, found that his health had very rapidly improved.

The opening of the Camden and Atlantic Railroad, twenty years ago, and subsequently the building of the Cape May and the New Jersey Southern Railroads, furnishing facilities for reaching this country, induced an immigration into it, which proved two facts, one of which is that the land is highly productive for fruit, and the other that it is a desirable place of residence for sufferers with pulmonary complaints. The last has become so well known throughout some portions of our country, particularly in New England and Northern New York, that two large settlements—Hammonton, on the Camden and Atlantic Railroad, and Vineland, on the Cape May Railroad—have been formed largely of persons seeking this favorable climate for the relief of those affections.

My attention was called to these facts during 1863 and 1864, while acting as the examining sur-

geon in West Jersey for the government, to examine drafted men and volunteers for the army. During this time, about three-fourths of all the men between twenty-one and forty-five years of age, residing in that section of the "Pines" south of the line of Burlington County, came before me for physical examination, and were found to be remarkably free from pulmonary diseases, except the very large number of settlers who had moved there because suffering from them. I took especial pains to question them about their experience of the effects of the climate, and was almost invariably told that they had been greatly benefited, and many had entirely recovered. Since then, a number of cases have come under my observation of marked benefit resulting from a residence there; but space does not permit an account of them.

The professional testimony concerning the climatic influences of this section is limited, because, until recently, but few physicians lived in it; but those who have practised there say that pulmonary diseases are not common. Dr. John W. Snowden, of Waterford Works on the Camden and Atlantic Railroad, one of the most intelligent and accomplished physicians in the State, who has practised in the "Pines" for a quarter of a century, wrote to me a few years ago, in reply to inquiries upon this subject, that "phthisis is decidedly infrequent among our native population; chronic bronchial affections are not frequent; strangers laboring under pulmonary diseases are very decidedly benefited while here." Dr. W. L. Newell, of Millville, wrote, "I do not consider phthisis frequent among our native population. I would say the same of chronic bronchial affections generally." Dr. J. K. Pitney, formerly of Absecum, said substantially the same.

Why should this part of our country be peculiarly adapted to invalids with lung-diseases? An answer to this question might be inferred from the characteristics of the land as described above, but Dr. Snowden admirably states the causes which act beneficially. He says, "I consider the terebinthinate matter in the air, and with which the 'cedar-swamp water' is more or less impregnated,—the latter being drunk usually by invalids,—and the dryness of the atmosphere consequent upon a dry, sandy soil, as the chief causes of benefit in these cases. To these may be added a moderate climate, not subject to such great extremes of temperature as more inland territory, and immunity from malarial and other endemic diseases that weaken the body and thus frequently develop hereditary tubercles or hasten their fatal termination."

Having thus shown that we have a suitable climate for invalids with pulmonary diseases, close to the great cities of Philadelphia and New York, a few economic reasons why physicians in the Eastern and Middle States should recommend it over more distant and doubtful localities may not be out of place. The wealthy consumptive alone can visit Florida, Minnesota, and Colorado, and too often only to die away from home and friends; but in this part of New Jersey, where land can be bought for from five to twenty-five dollars per acre, he of moderate means or of little means can take up his residence, have his family around him in his own home, with daily access to and from the business, schools, and other conveniences of the great cities, by means of the numerous railroads and the ever-increasing number of trains run over them. Chronic pulmonary disease cannot be cured by a short visit in a suitable climate, but only by a prolonged stay in it, and frequently a permanent residence alone will prevent a return of the complaint. There in the "Pines" will be found a cheap home and a healthy climate within easy reach of the pleasures and luxuries of the cities.

CHLORAL HYDRATE AND BROMIDE OF POTASSIUM IN SPASMODIC ASTHMA.

BY JULIO J. LAMADRID, M.D.

THE following two cases are of interest on account of the prompt and decided relief which the patients experienced. So far as I know, the above remedies have seldom or never been tried or given together.

On the 7th of January, 1874, I was called during the night to visit Mrs. Jacob B., aged 35. Upon arriving at the house I found the patient sitting at the edge of her bed, with her head and shoulders bent forward, and suffering with the usual symptoms of spasmodic asthma. In addition to this she would point to her hands and feet, showing that those parts were also affected by these spasmodic contractions or cramps. I gave her a hypodermic injection of the sulphates of morphia and atropia together (one-fourth of a grain of the former and one-ninety-sixth of the latter): this seemed to relieve her at once. I also prescribed for her a mixture containing some of the strongest antispasmodics of the materia medica. I called early next morning, but found that the patient was not much relieved. I then ordered a mixture of linimentum chloroformi (B. P.), oleum terebinthinæ, and tinct. capsici, to be rubbed well on her chest from time to time with the hand or a towel, and gave another hypodermic injection of morphine and atropia. At 10½ P.M. I was called again in a great hurry; her husband said she fell asleep soon after I left the house, and slept for three or four hours, and from that time seemed to be quite easy and comfortable, but about 9½ P.M. the dyspnœa came on again as bad as ever, if not worse. This time I advised her husband to throw the smoke of a cigar in her face: this seemed to relieve her so much that she insisted upon its repetition, but of course this could not last long. The smoke from some blotting-paper previously soaked in a solution of nitrate of potassium also gave relief for a time. This failing, I decided to give twenty grains of bromide of potassium and ten grains of chloral. I used the following formula:

℞ Chloral. hydrat., ℥v;
Potassii bromid., ℥iiss;
Syr. flores aurantii,
Aq. dest., ää f℥i.—M.

Sig.—Take a teaspoonful in half a wineglass of water every two hours, until sleep is induced or dyspnœa is relieved.

In less than an hour the patient began to feel the effects of the remedy, and when the time came for her to take another dose she was almost free from the dyspnœa and the cramps; soon after taking the second dose the patient fell into a sound and peaceful sleep, which lasted till next morning. She continued the use of the bromide of potassium alone in ten-grain doses,

three times a day, for a few days, and since then she has been free from these attacks.

Case II.—Harriet S., aged 65, a widow, and mother of eleven children, sent for me on the 3d of July, 1874, at 10½ P.M. I found her laboring under a severe attack of spasmodic asthma, to which she was subject. A hypodermic injection of morphia and atropia and antispasmodics gave her some relief, so that she was able to sleep the rest of the night. The next morning at 9 A.M. she still complained of a little dyspnœa; advised to continue the antispasmodics. At 8 P.M. she had another attack; I now ordered the hydrate of chloral in fifteen-grain and the bromide of potassium in ten-grain doses, to be repeated in an hour if not relieved. She had slept all night after taking the second dose, and next day was feeling quite comfortable and free from the dyspnœa. She also continued taking the bromide of potassium alone, and as yet she has not had any more attacks.

NOTE.—Since writing the above for publication in the *Philadelphia Medical Times*, I have received the *Medical News and Library* for August 1, 1874, and *Braithwaite's Retrospect*. In either of these journals the readers of the *Medical Times* will find an article upon this subject. In the former, Dr. C. Theodore Williams (*British Medical Journal*, June 13, 1874) speaks very highly of chloral in asthma, and in the latter Dr. Anstie (*The Practitioner*, January 7, p. 19, 1874) remarks that bromide of potassium is a powerful remedy in spasmodic disease.

It seems, therefore, from the above remarks that my own observations or experiments are independent of any others made in this country, and that I may justly claim the priority of its use in this disease; while on the other hand the two articles already referred to will show and confirm the truth of my own statement, and the value of these two agents combined together in the treatment of spasmodic asthma.

BROOKLYN, July 7, 1874.

TRANSLATIONS.

PHYSIOLOGICAL RESULTS OF THE TRANSFUSION OF BLOOD (*Centralblatt für Chirurgie*).—A. Jakowicki endeavors to answer the following queries by experimental research:

1. As to the influence of blood transfused from the same species as compared with that of blood from animals of other species.

2. What influence has transfused blood the corpuscles of which have been destroyed, and what influence have solutions of hæmoglobulin?

3. What is the relation of the fibrin-producing ferment in transfusion?

The experiments were conducted on cats and dogs, and, in the attempt to answer the first query, large quantities of blood were drawn from the vessels of an animal, and replaced by like quantities of defibrinated blood from animals of the same species. As the amount of blood which was allowed to remain in the vessels of the animal was too small to permit of the functions necessary to life being carried on, it was assumed that the defibrinated blood took this rôle. Exudations of the defibrinated blood into the tissue as observed by Magendie were not noticed in these experiments. In opposition to the results obtained by Geselius in St. Petersburg in 1873, Jakowicki noticed that blood from animals of another species, whether introduced just as drawn from the vessels of the animal or as defibrinated blood, speedily induced decomposition of the blood of the animal subjected to experiment. The urine soon became tinged with blood, as well as the fæces and the matters vomited. The color of the urine was not due to blood-corpuscles, but to coloring-matter of the blood in solution in the urine. If small quantities of foreign blood were injected, the urine gradually cleared up, lost its albumen, and returned to its normal state; while if blood of this character was injected in large amounts, the animals soon died. By the injection of serum, it was established that albumen found in the urine after transfusion must have its origin in the serum of the foreign blood injected.

In the experiments conducted to afford an answer to the second query, the solution of the blood-corpuscles was effected—1, by repeated freezing of the blood; 2, by agitation of the blood with small quantities of ether, and, 3, by agitation with water. In addition to blood altered by these methods, solutions of crystals of hæmoglobulin were used. After injections of these fluids there was noticed in some cases the production of clots, but frequently there were no clots produced, but only those symptoms in a somewhat milder form which are also due to the injection of blood of other species of animals. From this it was concluded that the serum of foreign blood increased the deleterious influence of the dissolved coloring-matter of the blood.

In answer to the third query, he concludes—1, that even noticeable amounts of the solution of the ferment when injected into animals are not able to produce coagulation of the blood in the vessels of the living animal; 2, the longer the injected ferment remains in the blood the less is its quantity, and it is safe to suppose that at the expiration of twenty-four hours it has entirely vanished; but the blood still contains some ferment even for a considerable time after the performance of transfusion, and there is some present even when transfusion has not been performed; 3, the respiratory process does not appear to have any influence upon the elimination of the ferment; 4, it is not possible to find any ferment inducing the production of fibrin in the urine, but in that secretion there is found a ferment similar to diastose. The suggestion is made that the fibrin-producing ferment may be the original form of all the ferments of the animal organism, and that it may enter the glands with the blood, and there be converted into the specific ferments. W. A.

NEUROMA MULTIPLEX.—Prof. Kosinski gives (*Centralblatt für Chirurgie*) the following account of a case of neuroma which was treated by neurotomy with the happiest results. The patient, a man aged 30 years, was admitted into the hospital in March, 1872, on account of painful tubercles on the lower extremities. He then stated that the tubercles made their appearance in his sixteenth year, and were at first small and painless, but that later, when he, as a soldier, was compelled to make extended marches, they began to increase in size and to become painful. At the first examination it was found that the posterior and outer sides of the thigh down to the lower third, and also a portion of the surface of the buttocks, were covered with scattered tubercles, round or oval in shape, and varying in dimensions from the size of a pin's head to that of a hazel-nut.

These tubercles had their seat apparently in the corium, and were for the most part hard to the touch. The layers were, however, elastic and semi-transparent, and had their edges more sharply defined from the surrounding skin than those of smaller size. The skin covering them was dry and uneven, and covered with an epidermis which was more scaly than normal. When pressure was made upon the tubercles, more

especially upon the larger ones, intense radiating pain was caused, but when the patient was in a state of complete repose his sufferings were much less.

In order to find out the nature of these growths, which outwardly presented the appearance of tumors formed of connective tissue, two of the largest and most painful tubercles were cut out and examined with the microscope, and were found to be composed of nerve-fibres and connective tissue. The cutaneous endings of the nerve-fibres were in the tubercles, and the parts involved corresponded to the parts supplied by ramifications of the lesser ischiatic and a portion of the fibres of the external cutaneous nerves.

The medical treatment with mercury, iodine, etc., which had been attempted in this case, had proved entirely without effect; and as it was not possible to excise all the growths with the knife, or destroy them with caustics, it was determined to do away with the sensibility of the tubercles by the excision of a portion of the nerve-trunk whence the filaments supplying them were derived. In order to effect this, an oblique incision, running nearly in the direction of the gluteal fold, was made, and, the nerve having been reached, a portion of it, about one inch in length, was cut out. Preference was given to the oblique line of incision over the perpendicular, since it permitted the nerve-trunk to be found more readily. The immediate result of the operation was a loss of sensibility in the tubercles themselves, as well as in the region in which they were situated. Some of the tumors, however, especially those to the front and outer side of the thigh, still manifested sensibility, but to a less degree than before the operation. As the wound began to heal by granulation, the tubercles began to disappear, and this process went on with such rapidity that at the close of the four weeks which the patient spent in the ward, the larger tubercles were diminished to half their previous size, while those of smaller dimensions had vanished almost completely.

Four months later, it was found that this process of absorption had continued, and that the remains of the tubercles which still existed occasioned the patient no pain.

Prof. Kosinski thinks that this case is of interest in the following respects: 1, the diagnosis could only be made with certainty by the aid of the microscope; 2, that so far as his knowledge extends there is no case of neurotomy with tumors of this character upon record; and, 3, the results of the operation were so far in excess of his expectation. The rapid disappearance of the tumors consequent upon the nerve-section may also be of interest to the physiologist, since it points out the influence of the sensory nerves upon the nutrition of the tissues. W. A.

Treatment of Phimosis by Means of the Galvanic Cautery (*Gazette des Hôpitaux*).—Amussat now employs in the operation for phimosis the galvanic cautery, and six cases are reported, in each of which the operation was thus performed with some slight modification of the details. The patients were usually operated on in a sitting posture, but children were placed under the influence of chloroform and laid upon a bed. A shield of boxwood was passed between the prepuce and the upper surface of the glans penis, and a perforation of the prepuce was then made by means of a trocar of appropriate size. A platinum wire having been passed through the trocar, this instrument is to be withdrawn. An assistant then fixes the penis and the boxwood shield, the wire is connected with the galvanic apparatus, and the operator with the heated wire cuts through the foreskin from behind forward. It is not necessary to employ a trocar in the perforation of the prepuce; the same object can be attained by using a curved needle through the eye of which the platinum wire has been passed. The wire, too, can be substituted by the bistoury used in galvano-caustic operations, and when this is employed the operator grasps the penis in the left hand and cuts through the prepuce upon the wooden shield from without inwards.

A linear separation of the prepuce can also be effected by placing it directly between the two branches of a galvanic forceps, about ten minutes being required for the operation when thus performed. This mode of operating is attended by no loss of blood, and the wound is usually healed at the expiration of from three to five weeks. As a rule it is only necessary to cut through the superior part of the foreskin; but if a lateral incision or division of the frænulum is needed it can be effected in a similar manner. W. A.

Influence of the Inhalation of Chloroform by the Parturient Woman upon the Fœtus.—Zweifel (*Berlin. Klin. Wochenschrift*) has proved by examinations of the placenta and by examination of the urine of newly-born infants that chloroform given to the mother by inhalation can pass into the fœtal circulation, and thus the child in utero may be chloroformed. W. A.

THERAPEUTIC NOTES.

Otorrhœa.—M. Ménière recommends in "earache" the use of leeches, with the following solution:

℞ Aconitiæ, gr. i;
Aquæ, f℥v.—M.

In chronic otorrhœa inject the external meatus freely with tepid water, and paint once a day with—

℞ Acid. carbolic., gr. i;
Glycerin., f℥i.

Three to six drops of the following solution may be allowed to fall into the ear and remain for eight or ten minutes:

℞ Zinci sulph., gr. iv;
Glycerin., f℥ii;
Aquæ, f℥vi.—M.

When great vascularity of the bottom of the ear exists, or even when there is perforation of the tympanum, use—

℞ Plumbi acetat., gr. ss ad i;
Aquæ, f℥ss.—M.

—*The Doctor*, August 1, 1874.

Digitalis in the Treatment of Hæmoptysis.—Dr. Reboul has been in the habit of using for some time past large doses of digitalis in the treatment of hæmoptysis. The formula employed by him is as follows:

℞ Pulv. digitalis, ℥ss ad ℥i;
Aquæ, ℥viss.

Make an infusion, and add ℥x syr. limonis. Dose, a tablespoonful every hour, to be suspended should nausea and vomiting supervene. This treatment is peculiarly efficacious in hæmoptysis occurring during the feverish stage of phthisis.

Anti-Syphilitic Gargle (*Langlebert*).—

℞ Tinct. iodinii, ℥ss;
Aq. destillat., ℥viss;
Syr. aurantii, ℥iss.—M.

Useful in mucous patches and secondary ulcerations of the lips and buccal cavity. This gargle is preferable to those containing corrosive sublimate, which blacken the teeth. If the ulcerations are rebellious, they may be touched lightly with the acid nitrate of mercury.

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EDITORIAL.

WANTED—LEADERS FOR A NEW CRUSADE.

FEW of the folk-movements of modern times have made more noise, been urged more pertinaciously, or created more disgust, than the so-called "woman's-rights movement." With its ultra developments we sympathize no more closely than does the most conservative reader of the *Times*. Rooted in the very groundwork of the sexual characteristics of a typical man, it seems to us, must be an antipathy to the hard-featured, loud-tongued, masculine woman fitted by nature for the platform and the hustings. The perfect type of woman is undoubtedly feminine and domestic, and such alone nature ordains as attractive to the typical masculine man. By the moralist the extreme woman's-right movement must be looked upon with suspicion, as, if he be not blind, he sees how closely it approaches in the doctrines and the practices of some of its foremost promoters to the brutish creed of "free love." Yet, in spite of the repugnance so widely felt, in spite of the taint of impurity, the movement still appears to have vitality, and in a measure to prosper.

The reason of this is obvious. Undoubtedly women in the past have not had that which is their due, and if now in the family and during prosperity homage is generally yielded them, yet when adversity comes, and the woman is thrown upon her own resources, the tale too often grows sad, and she enters too often upon the tragedy of a struggle for mere existence. The world may be hard, yet the heart of the world feels pity for the wrong and woe of classes; and it is the underlying sentiment that those women who are forced to earn their daily bread very generally lead a life of excessive unrequited toil and anxiety, which has given vitality to this woman's-rights movement. Every right-minded man must sympathize with any effort to open new avenues for suitable employment to women. The opposition to some specific movements having this intent certainly has arisen from the conviction that woman was unfitted by nature for the positions into which she was being forced, and from the belief that nothing but evil could in the long run result from the effort to put a square peg into a round hole.

Likely enough our readers have already surmised that we are approaching the subject of "women-doctors." In this, however, they are partially mistaken. It appears to us that the time for discussion of this subject has gone by: the experiment is being made, and by its results before the lay public the movement will stand or fall.

We may confess, in passing, to a want of faith in the general adaptability of the sex to the calling of the physician, but really desire to call attention to a very curious anomaly in connection with the matter. Loudly, pertinaciously, has the battle been fought for the sex to enable it to enter upon an employment which requires the coolest of heads and the calmest of nerves to meet its emergencies, the wisest of judgments to solve its problems, and great physical powers to pass through its toils and withstand its exposure. So true are these things, indeed, that the most violent advocate of women-doctors must acknowledge that the great bulk of professional work will always be done by men; that in the army and the navy, as well as in the civil life of many country districts, women can take practically no part, and that in the city they can occupy only a section of the ground.

Closely allied to the medical profession is one requiring no cool head and calm nerves for trying moments, no clear judgment for times of doubt, no physical powers to bear active toil and exposure; a profession well paid, sedentary, requiring for reasonable success only a fair measure of intelligence and some special training and education. Yet the male pharmaceutist sleeps the sleep of undisputed possession: no nightmare of Mrs. Partington's sweeping his sex from the old fields of labor breaks his rest; no vision of displacement haunts his day. With the

Mohammedan fatalist he can cry, Mawsh Awllaw! "God be praised!" as he views the quiet of his own domicile and the inroads upon those of his brethren.

Why this is, it is difficult to say. It is possible that some of the earliest promoters of the "woman-doctor movement" were women who preferred noise to quiet, publicity to domestic life, and the supposed *éclat* of the medical profession to the more retiring, if not less remunerative, work of the pharmaceutist.

Whatever the causes may have been, the fact remains that women-druggists do not exist in America; and we are glad to see that in England this new avenue of employment for the sex is opening up. The right of women, who have successfully passed the usual examinations, to receive certificates, to become licentiates of the Society of Apothecaries in England, and to practise as apothecaries, is fully recognized by the new Apothecaries Act passed by the British Parliament, which received the royal assent a few weeks since.

We can see no reason why the male druggist or druggist's clerk shall not be in great part replaced by his sister in the trade. It is true that we have known those who would not hesitate to trust their lives to female physicians declare, with strange inconsistency, that women-druggists would make mistakes; that they are not careful enough. The major certainly embraces the minor, and he or she who is not careful enough to become a druggist is still more unfit to be a physician.

It may be that a woman rarely or never makes bread twice alike, or two shirts that are exactly similar; but, even if it be true that in ordinary life woman is not so accurate as man, is it not equally true that the difference is more the result of diversity of training than of inherent personal characteristics? We firmly believe that women can be trained to be careful and accurate. The hand that untaught can be trusted with the poison at the bedside certainly can be educated to handle the same materials at the dispensing-counter.

Why should not women be admitted to our colleges of pharmacy? No nude anatomy, no discussion of sexual problems, nothing that need tinge the cheek of modesty, is necessary there; and side by side without taint and without even inconvenience ought it to be possible to co-educate the sexes in pharmacy and materia medica.

Let us trust that a little of that energy which has been employed in thrusting woman into those positions for which she is at least doubtfully fitted by nature may be diverted into this seemingly safe channel of effort.

CORRESPONDENCE.

To the Editor of the Philadelphia Medical Times:

DEAR SIR,—I have been incited by the very interesting record of the performances of the dog Carlo, to give your readers a brief account of an instance of remarkable guessing powers in a spaniel. The incident seems to necessitate the possession, in a high degree, of both imagination and reasoning powers by the brute. For the truth of the narration I can vouch. The dog was an exceedingly sagacious one, and had already been taught a number of English words, as hat, handkerchief, etc.,—going for those articles when sent. One evening, his master, sitting in a front chamber, said, "Now I will teach Sport to fetch my slippers," and, commencing to take off his boots, told the dog to go to the next room for those articles. Sport instantly set off, but brought a work-basket or some other indifferent article, and was sent back, only to bring a cushion. By this time the master had got off his boots, and when he said, "No, no," to Sport, the latter stood still for a minute or two, seemingly in thought, and then suddenly, his face lighting up, sprang, with a suppressed bark, into the next room, and in a moment came back wagging his tail, with a night-shirt in his mouth. The dog had frequently seen his master undressing, and had, without doubt, thought that taking off the boots was the commencement of that process, and reasoned that a *robe de nuit* was the desideratum. That his actions were not the result of a mere coincidental chance is shown by the circumstance that the night-shirt was kept, with other things, in a closed box on the top of a sort of rack, so that the dog to get it was forced to climb up to the box, raise the lid with his nose, and search out the garment from amidst the other things. It only remains to add that Sport learned, once for all, that night, what "Fetch my slippers" meant; not, however, until he had brought out nearly everything else in the room.

Yours, etc.,

H. C. Wood, Jr.

SELECTIONS.

PROLAPSE OF THE UMBILICAL CORD.

DR. GEORGE J. ENGELMANN sums up a paper (*The American Journal of Obstetrics*, August, 1874) as follows:—In conclusion, I will sum up in a few words the facts attained and the laws established by the examination of our prolapse cases.

The causes of the prolapse of the umbilical cord have mainly proved to be such circumstances as prevent the complete filling of the pelvic brim, and the close adaptation of the lower segment of the uterus to the presenting part. One of the more important of these circumstances is the shape of the presenting fœtal part itself, and we thus find that foot-presentations are most frequently complicated by prolapse, whereas vertex-presentations are least threatened.

The fœtal appendages are of secondary and minor importance: undue length of the cord, its marginal insertion, or attachment of the placenta low down in the

uterus, can never be direct causes of the accident; excess of liquor amnii is alone to be feared.

Some stress is to be laid on abnormity in shape and position of the womb, much more upon twin births. More dangerous than any of these is the contracted pelvis, which I have proved by measurements and numbers to be the main cause of prolapse of the funis, directly and indirectly; a fact hitherto generally accepted, but never as yet clearly established. Another such vague general statement, that the prolapse is by far more frequent among multiparæ than among primiparæ, our cases disprove; they show that primiparæ are, comparatively speaking, almost as frequently afflicted as multiparæ.

The law governing the location of the prolapse is of importance, and here for the first time touched upon: it will, I trust, be verified by the investigation of other observers.

The post-mortem examinations revealed only the lesions due to death from asphyxia, nothing characteristic for death caused by prolapse of the cord.

The prognosis we can give is somewhat better than generally allowed; most favorable for foot-presentations, after these for shoulder and transverse presentations, while vertex-presentations are more dangerous than any; the case being, under all circumstances, more threatening when occurring in a primipara.

In the treatment of our cases the high importance of the postural method has been developed, more as an adjuvant, however, than as a method in itself of dealing with the prolapse.

Version is comparatively the most successful of all operations, and should be more frequently resorted to when any choice of method is given, as in head-presentations: the application of the forceps and reposition of the cord are less to be relied upon; but, whatever may be the course determined upon, it must be borne in mind that the success of all operations by which we seek the preservation of the child whose life is threatened by compression of the prolapsed cord is in a measure dependent upon the judicious use of chloroform, its application to full surgical anæsthesia.

GLEANINGS FROM OUR EXCHANGES.

TREATMENT OF FRACTURES OF THE FEMUR BY IMMOVABLE APPARATUS (*New York Medical Journal*, August, 1874).—The proper treatment of broken bones is still an open question, for, while upon a few points there seem to be a concurrence of opinion and a final settlement of practice, upon many points opinion and practice continue to differ. Dr. Frank H. Hamilton, in an able paper on this subject, asserts that while at the present moment plaster of Paris dressings are especially under discussion, a difference of opinion exists more particularly in reference to the treatment of broken femurs by the continuous plaster roller, known generally as Mathiesen's method, and introduced in 1852. The sudden and terrible accidents, such as gangrene, ulceration, delayed union, and deformity, which had frequently followed the previous use of a similar method, prevented the general adoption of this one; but twenty years having passed away, and a new generation arisen, "primary rollers," "apparatus immobile," and plaster, convey no apprehensions of danger and are readily accepted.

In 1871 Prof. Sands reported twenty-one cases of fracture of the femur treated by Mathiesen's method, in eight of which there was no shortening, the maximum shortening being one inch; Dr. Bryant published twenty-three cases, thirteen of which are not shortened; and in 1872 Dr. St. Johns recorded fifty cases, with an average shortening of one-third of an inch, and of the whole number eighteen united without any shortening. None of these gentlemen met with any serious accident, except one perineal slough. Dr. Hamilton states that in his experience the results have not proved equally satisfactory, and suggests as probable that the examination and measurement of many of these cases had been left to other and less experienced persons than the gentlemen who reported them. In all his own cases the examinations and measurements were made by himself, and were witnessed and confirmed by the house-surgeons or by some competent medical man. By these reports he seeks to attain two purposes: 1, as has already been intimated, to enable us to form an intelligent opinion of the actual and relative value of the plaster of Paris dressing as practised at Bellevue; and, 2, to determine what amount of shortening and deformity generally results from the treatment of fractures, at the present day, in the hands of our most experienced city surgeons.

In six cases of fracture of the femur treated with plaster of Paris, in persons from eleven to eighteen years of age, there resulted in two cases a shortening of five-eighths of an inch, in one three-fourths of an inch, in two one inch, and in one one and a half inch. In three of the cases there remained considerable deformity, and in two there was anchylosis. In twenty cases of fracture of the femur treated by plaster, in persons over eighteen years of age, the following results were obtained: perfect, 1; shortened three-eighths inch, 2; shortened one-half inch, 1; shortened five-eighths inch, 1; shortened three-fourths inch, 3; shortened one inch, 3; shortened one and one-eighth inch, 1; shortened one and one-fourth inch, 2; shortened one and three-fourths inch, 1; shortened two inches, 1; case of gangrene and death, 1. Average shortening in nineteen cases, more than three-fourths inch. In five cases there was anchylosis; in one, delayed union; in one, no union; in five, deformity; and in one, paralysis, abscess, and caries.

The surgeon has to depend in this method upon the perineum for counter-extension, and upon the heel and the top of the foot for extension,—dangerous parts upon which to make pressure. If the plaster becomes loose it has to remain so, or else the limb must be re-dressed in the same manner as at first. The gangrene which occasionally occurs is due to the cutting off of the superficial venous circulation by what is in effect an Esmarch's bandage. Dr. Hamilton has found that his own methods of side-splints, adhesive plaster extension, pulley and weight in the adult, and a double thigh-splint in children, have given better results than has plaster of Paris.

He gives nine cases of fracture of the femur treated recently without plaster, and, like the fractures already reported, not selected, but taken in the order of their occurrence.

In no case was there any deformity or anchylosis. In four cases of eighteen years and under, three were perfect, and one had two-eighths of an inch shortening. In five over eighteen years of age, one inch was the maximum and three-eighths of an inch the least shortening. The average shortening of all nine cases was three-eighths of an inch. Dr. Hamilton makes the following remarks on the conditions of a faithful measurement of the thigh:

"The fact that a man walks without a halt is no evidence that there is no shortening of the limb. In this regard patients are very unequal; one, having a shortening of only half or three-quarters of an inch, will limp perceptibly; while another, with a shortening of one inch or even one inch and a half, may not limp at all. This has been observed repeatedly. Nor is it

any evidence that the limb is not shortened because, while lying in bed, the heel of the broken limb can be brought down to the level of the other. By pitching the pelvis, the spine remaining erect, the heel may be made to descend, in most persons, two inches or more.

"Measurements made from the symphysis pubis, or from the round end of the anterior superior spinous process, are unreliable.

"The patient should repose upon his back, upon an even surface, with his lower extremities as nearly as possible in a line with the axis of his body, the two wings of the pelvis being in the same horizontal (transverse) line.

"A flexible, graduated tape-line is to be preferred to the steel tape-measure. The foot being steadied by an assistant, the surgeon should put his thumb-nail against the line where it joins the ring, and push his nail into the skin just *below* the anterior superior spinous process of the ilium, pressing firmly up and back, the back of his nail resting upon the skin. In this way he obtains a fixed point, and he can obtain an exactly corresponding point upon the opposite side. Below, the measurement may be made from either malleolus, but the outer has the most defined extremity, and is generally preferred. In most cases, for some months after the close of the treatment there is some œdema about the ankle, which renders it necessary to use great care in determining the point of the malleolus. The thumb-nail of the opposite hand may be used for this purpose, resting vertically upon the skin (flat against the lower end of the malleolus).

"There are a few sources of error which cannot be avoided. Occasionally, but very rarely, the malleoli of the two limbs are of unequal length; and in a few very rare cases, one limb may be congenitally shorter than the other."

HYDATID OF THE BRAIN—EPILEPTIC CONVULSION—DEATH (*British Medical Journal*, August 1, 1874).—A girl æt. 17, an inmate of a reformatory for two years and a half, began to excite attention by her strange conduct. She would steal things, and secrete them under her bed without any object. She refused her food, or crumbled it up and hid it in her pockets. She would lie on the floor and sleep in the daytime, but at night was restless and noisy, disturbing the other inmates of the room. She told her companions that she was shamming, that she might be sent to a hospital. On one occasion she attempted to strangle herself with a piece of ribbon tied tightly round her neck.

As no actual disease could be discovered to account for this strange erratic conduct, it was attributed to hysteria, the result of amenorrhœa, she having menstruated but once.

One morning she arose as usual at six o'clock, dressed herself, and struck one of her companions without any provocation or apparent reason. She shortly afterwards fell on the floor in an epileptic fit, and died immediately. When the body was seen shortly afterwards, the face and neck were perfectly livid, with foam issuing from the mouth. The tongue was not bitten.

The following day a post-mortem examination of the head was made. The brain was quite healthy, the vessels very slightly congested, and there was no effusion; but, on exposing the lateral ventricles, on the floor of the right one, attached to the optic thalamus, was an hydatid cyst.

LEMON-JUICE IN DIPHTHERIA.—M. Revillout recommends (*Gaz. des Hôpitaux*, June 20) in the strongest terms the employment of large quantities of pure lemon-juice as a gargle. He says that he and his father have used it during eighteen years, and always with success, it being the most certain application yet known.—*Med. Times and Gazette*, June 27, 1874.

AN EXTRAORDINARY CASE (*N. Y. Medical Record*, Aug. 1).—The *Irish Hospital Gazette* records an extraordinary case recently brought before the Dublin Pathological Faculty by Professor R. W. Smith, of Dublin University. The disease under which the woman succumbed whose skeleton he exhibited was one of rare occurrence, and difficult alike to diagnose, treat, or even name. At the time of her death the woman was forty-five years old. Fifteen years previously she had been sent to jail for some offence, which was probably committed while insane, as shortly afterwards she was transferred to a lunatic-asylum. During the first ten years of her residence there nothing remarkable about her was noticed, and she was employed in washing the floors, etc. At the end of this period she ceased to be able to work, and was confined to bed for the remaining five years of her life, gradually becoming more feeble, and dwindling away in stature until she became about one-half the height she was originally. She did not complain of any pain; her limbs became coiled up in every possible shape, and she seemed gradually to disappear from off the face of the earth. She died, possibly, from constitutional disease of the osseous system. He (Professor Smith), however, looked upon the condition of the bones not as a disease, but as a manifestation of an as yet unknown diseased condition. Professor Smith had weighed all the bones individually; the total weight of the skeleton (including the cranium) was two and one-half pounds, which equalled about the fourth part of the weight of a child at birth. The bones were extremely light, soft, fragile, and atrophied in every respect. The number of fractures was prodigious. The ribs were in a hundred fragments. The head of the humerus was bent; the fibulæ were curved; the thigh-bones and pelvis were huddled up together; and the bones of the vertebræ thinned and worn away across the front of their bodies. The lower jaw was atrophied and broken into three fragments; the base of the skull was cribriform all through; and he (Professor Smith) believed that if the woman had lived longer not a vestige of a bone in her body would have been left. As to the nature of this disease, he (Professor Smith) believed that it was identical with rickets occurring in the adult; and although that opinion might appear heretical to some, yet he was glad to find that in the last volume of Trousseau's Lectures on Clinical Medicine, that distinguished author had expressed his opinion that osteomalacia and rickets were one and the same disease.

INTRAVENOUS INJECTIONS OF CHLORAL (*The Doctor*, Aug. 1, 1874).—The proposal of M. Oré to inject a solution of chloral into the veins for the purpose of producing anæsthesia has given rise to some discussion.

M. Collin objects to any intravenous injection on the following grounds:

1. That any medicinal agent employed in such a manner may act in too decided a way upon the cardiac, muscular, or nervous system.

2. That the substance so injected might form microscopic clots capable of plugging the capillaries of the lung and producing grave and even mortal lesions.

On the other hand, M. Bucquoy believes, after experimental tests—

1. That the act of injection is innocuous when the vein is not denuded.

2. That chloral used in this manner is not more dangerous than chloroform.

ACETIC ACID SPRAY IN DIPHTHERIA.—According to the *New York Medical Record*, very satisfactory results have been obtained at the Charity Hospital, in the local treatment of diphtheria by the use of acetic acid, in solutions of varying strength, in the form of spray produced by the atomizer.

THE PRODUCTION OF ANÆSTHESIA DURING SLEEP.—Professor Dolbeau, after several series of experiments, feels justified in drawing a somewhat positive conclusion on the possibility of inducing anæsthesia during sleep. "Scientifically, it is difficult, but often possible, to render persons insensible by means of chloroform, who are in a state of natural sleep. Certain precautions, the employment of a very pure article, and great practice, are conditions that favor the success of the attempt. It is probable that certain subjects are absolutely refractory, that is, it is impossible to anæsthetize them, in spite of every precaution that can be taken. Others, on the contrary, and especially young children, easily undergo anæsthesia without being aroused from their sleep by the irritation which the anæsthetic produces in the air-passages. Under the criminal aspect, it is certain that chloroform administered to sleeping persons may facilitate the perpetration of certain crimes. It is, however, probable that the conditions favorable for anæsthesia will be rarely combined on the occasion of criminal attempt. But before the tribunals the expert should declare that it is possible, if not easy, to render a sleeping person sufficiently insensible by chloroform to allow of his becoming the victim of a criminal attempt."—*Missouri Clinical Record*, August 8, 1874.

HYPODERMIC INJECTION OF ERGOT IN VARICOCELE.—In a case of varicocele which had existed for a long time, Dr. Bertarelli, of Rome, injected a solution of ergotin under the skin of the scrotum. The solution consisted of ergotin, 1 gramme, water, with a little alcohol, 2 grammes. The patient was ordered to maintain absolute repose, and to make local application of cold compresses. The next day the varicosities had disappeared. The success was complete after another injection, which was attended by but slight local reaction.

Dr. Cittaglia had cured another case of varicocele by the same treatment. By the eighteenth day nearly all the varicosities had disappeared; and there was nothing but a slight induration of the corresponding testicle to be observed.—*Alm. di Terapie*, 1874, *Lo Sperimentale*, March, 1874.

CHLORHYDRATE OF TRIMETHYLAMIN IN RHEUMATIC FEVER.—A new successful instance of the above has been communicated to the Therapeutical Society of Paris, by Dr. Martineau. When called to the patient he found that the elbow had, since the morning, become red, enlarged, and painful; skin hot; pulse 90. Ten grains of the drug were administered. The next day a great improvement was noted. The pain in the elbow had entirely disappeared, and the pulse had fallen from 90 to 65. No crisis or cardiac complication had occurred. The same treatment had been equally successful in a similar attack a year previously.

ENEMATA OF BROMIDE OF POTASSIUM IN OBSTINATE VOMITING.—Dr. Girabetti (*Medical News and Library*, August 8, 1874) has obtained the very best results from the administration of enemata of bromide of potassium, in doses of from one-half to two drachms, in cases of obstinate vomiting attending the pregnant state. The same drug, also administered in enemata, has been very successful in the hands of Dr. Laborde, of Paris, in obstinate vomiting connected with disease of the stomach, liver, and intestines.—*Lancet.*

ACTION OF BROMIDE OF CAMPHOR.—From many experiments upon cats and guinea-pigs, Bourneville concludes that, even in small doses, the bromide of camphor depresses the temperature, and that this depression increases progressively as the dose is increased, to attain its maximum in those cases where the dose administered is sufficient to produce fatal results.—*Le Progrès Médical*, June 20.

SURGICAL ANÆSTHESIA.—M. Fornes (*Medical News and Library*, August, 1874), a French naval surgeon, urges the advantage of putting a patient asleep by administering chloral hydrate previously to his inhaling chloroform for the purpose of anæsthesia.—*Le Mouvement Médical*, June 27, 1874.

MISCELLANY.

LOUISE LATEAU AND THE DISEASE OF THE MYSTICS.—Dr. Charbonnier has lately brought under the notice of the Académie de Médecine in Paris the disease under which Louise Lateau, the famous ecstatic, is now laboring. In a general review of the so-called mystics, he demonstrates that two natural conditions are indispensable to reach the mystic stage: the one, to profess a religion of which incarnation is one of the fundamental principles, so as to allow man to represent his divinity according to the form which accords with his desires and the climate which he inhabits; secondly, to submit himself to a debilitating regimen, which, while diminishing the activity of his physical functions, suppresses the superior faculties of the soul, to the advantage of the imagination—the *folie du logis*. Among the Hindoos, as among the Christians, the ecstatic undergoes a long preparation, consisting, for the corporeal part, in proceedings likely to annihilate all the functions; and for the soul, in such as suppress the functions of relation and the exercise of the will, and in the concentration of all the strength in order to fix the attention on a single object. He says that ecstasy has never been produced at once and in a healthy subject. The history of all mystics bears witness to this; and Louise Lateau has appeared, once again to confirm this law,—a law which takes the occurrences which have lately taken place at Bois d'Hama from the category of the marvellous.

Louise Lateau, who began to show signs of the ecstatic state when about eighteen years old, was accustomed from her earliest infancy to the more than frugal regimen of the Hindoos,—to the enforced fasts of poverty, to privations of all kinds, watchings, fatigue, and, in fact, everything which could impede the functions of nutrition. On several occasions she has manifested true suspensions of functional action, characterized by the absence of urinal discharges, constipation, sleeplessness, spasms of the epigastrium, and complete want of appetite,—a group of symptoms which are often found assembled in Esquirol's observations respecting maniacs. The stoppage of the functions, this living mummifaction of the organs and tissues, sometimes lasts a month in Louise Lateau. Dr. Charbonnier believes this condition to be the same which is often met with in insane persons, who refuse to take nourishment with the greatest obstinacy.

When Louise Lateau had arrived at a certain stage of debility, she suffered from neuralgic attacks, the inseparable companions of an impoverishment of the blood in common with sleeplessness. *Sanguis moderator nervorum, sanguis somniferus.* These nervous